



Water-Data Report 2012

06177500 REDWATER RIVER AT CIRCLE, MT

Missouri-Poplar Basin
Redwater Subbasin

LOCATION.--Lat 47°24'50", long 105°34'32" referenced to North American Datum of 1983, in SW ¼ SW ¼ sec.11, T.19 N., R.48 E., McCone County, MT, Hydrologic Unit 10060002, on left bank at Circle, 1 mi upstream from Horse Creek, and at river mile 110.2.

DRAINAGE AREA.--547 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--April to November 1929, March to November 1930, July 1931 to December 1932, March to June 1933, February to November 1934, April 1935 to December 1936, April 1937 to June 1972, October 1974 to September 2004, October 2009 to current year. Monthly discharge only for some periods, published in WSP 1309. Prior to October 1967, published as Redwater Creek at Circle.

REVISED RECORDS.--WSP 1006: 1929-30, 1932-33, 1935-39. WSP 1509: 1929, 1934. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Sharp-crested weir since Sept. 24, 1938. Elevation of gage is 2,394.32 ft, referenced to the National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to June 1, 1941, and Mar. 23, 1943, to Feb. 16, 1948, nonrecording gage at site 0.3 mi upstream at same elevation. June 1, 1941 to Mar. 22, 1943, nonrecording gage at site 200 ft upstream at elevation 2.8 ft lower. Feb. 26, 1948 to May 7, 1950, nonrecording gage at site 200 ft upstream at present elevation.

REMARKS.--Records are fair except for estimated daily discharges, which are poor. Diversions for irrigation of about 1,200 acres upstream from station. U.S. Geological Survey satellite telemeter at station. Several unpublished observations of water temperature and specific conductance were made during the year.

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06177500 REDWATER RIVER AT CIRCLE, MT—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	1.4	2.8	e3.1	e3.2	e2.1	e0.94	2.7	3.0	6.5	1.2	0.14	0.04
2	1.4	2.9	e3.1	e3.1	e2.1	e0.92	2.5	3.0	5.6	0.98	0.14	0.04
3	1.4	2.7	e3.1	e3.1	e2.1	e0.91	2.4	2.8	6.1	1.3	0.17	0.04
4	1.4	2.6	e3.1	e3.1	e2.1	e0.94	2.4	2.5	6.5	20	0.20	0.04
5	1.4	2.7	e3.1	e3.1	e2.1	e1.9	2.2	2.2	7.2	5.3	0.20	0.05
6	1.3	3.2	e3.0	e3.1	e2.1	e2.3	2.3	2.2	5.4	3.4	0.15	0.05
7	1.5	3.2	e3.0	e3.1	e2.0	e2.0	2.6	1.9	4.5	2.0	0.12	0.05
8	1.7	3.2	e2.9	e3.0	e2.1	e2.2	2.5	1.8	3.9	1.3	0.13	0.05
9	1.8	3.2	e2.8	e2.9	e2.1	e2.8	2.3	1.7	4.5	1.1	0.07	0.05
10	2.0	3.3	e2.8	e2.9	e2.1	e4.7	2.3	1.6	3.9	0.92	0.04	0.05
11	2.1	3.3	e2.9	e2.7	e2.0	e3.2	2.3	1.6	3.5	0.77	0.06	0.05
12	2.9	3.3	e2.8	e2.8	e2.0	e15	2.3	1.6	3.0	0.79	0.09	0.04
13	2.4	3.4	e2.9	e2.7	e2.1	19	2.1	1.5	2.6	0.79	0.20	0.05
14	2.1	3.4	e2.9	e2.7	e2.1	18	2.1	1.3	2.4	0.60	0.24	0.05
15	2.1	3.4	e2.8	e2.6	e2.1	16	2.1	1.1	2.2	0.49	0.18	0.05
16	2.1	3.2	e2.8	e2.5	e2.1	13	1.9	0.99	2.2	0.49	0.19	0.06
17	2.1	3.2	e2.8	e2.3	e2.2	9.6	1.9	1.0	1.9	0.40	0.17	0.06
18	2.1	3.0	e2.9	e2.1	e2.2	7.2	2.0	0.97	1.8	1.2	0.20	0.06
19	2.0	3.2	e2.9	e2.0	e2.2	6.8	2.1	0.99	2.1	7.5	0.21	0.05
20	2.0	e3.0	e2.9	e1.9	e2.2	6.5	2.1	0.94	1.9	8.1	0.13	0.05
21	2.1	e3.1	e2.9	e2.0	e2.4	5.7	2.0	0.82	1.8	4.2	0.10	0.05
22	2.1	e3.1	e2.9	e2.1	e2.4	4.9	2.1	0.72	1.7	2.4	0.13	0.05
23	2.6	e3.0	e2.9	e2.1	e2.3	4.2	2.1	0.73	1.5	1.5	0.18	0.05
24	3.2	e3.0	e2.9	e2.1	e2.3	3.7	2.1	0.72	1.5	1.1	0.14	0.06
25	2.8	e3.1	e2.9	e2.0	e1.9	3.5	1.9	0.73	1.4	0.80	0.10	0.09
26	2.5	e3.1	e3.0	e2.1	e1.7	3.5	1.7	1.2	1.3	0.55	0.15	0.05
27	2.4	e3.1	e3.1	e2.0	e1.6	3.5	1.9	2.6	1.4	0.36	0.18	0.06
28	2.3	e3.1	e3.1	e2.1	e1.3	3.3	2.4	3.4	1.3	0.29	0.23	0.06
29	2.5	e3.1	e3.1	e2.1	e1.2	3.0	2.5	3.9	1.3	0.28	0.19	0.05
30	2.6	e3.1	e3.1	e2.1	---	2.8	2.8	6.5	1.2	0.22	0.22	0.06
31	2.8	---	e3.1	e2.1	---	2.7	---	8.2	---	0.15	0.14	---
Total	65.1	93.0	91.6	77.7	59.2	174.71	66.6	64.21	92.1	70.48	4.79	1.56
Mean	2.10	3.10	2.95	2.51	2.04	5.64	2.22	2.07	3.07	2.27	0.15	0.05
Max	3.2	3.4	3.1	3.2	2.4	19	2.8	8.2	7.2	20	0.24	0.09
Min	1.3	2.6	2.8	1.9	1.2	0.91	1.7	0.72	1.2	0.15	0.04	0.04
Ac-ft	129	184	182	154	117	347	132	127	183	140	9.5	3.1

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2012, BY WATER YEAR (WY)*

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	0.52	0.39	0.46	0.38	14.1	68.9	16.6	4.73	14.7	10.8	1.94	2.29
Max	19.2	7.11	8.58	6.13	141	476	418	88.0	167	116	37.4	139
(WY)	(1987)	(1987)	(1952)	(1976)	(1943)	(1994)	(1952)	(2011)	(1944)	(1957)	(1932)	(1986)
Min	0.00	0.00	0.00	0.00	0.00	0.05	0.07	0.02	0.00	0.00	0.00	0.00
(WY)	(1941)	(1931)	(1936)	(1936)	(1939)	(1941)	(1961)	(1961)	(1961)	(1939)	(1939)	(1940)

*During periods of record April to November 1929, March to November 1930, July 1931 to December 1932, March to June 1933, February to November 1934, April 1935 to September 1936, April 1937 to June 1972, October 1974 to September 2004, October 2009 to current year.

06177500 REDWATER RIVER AT CIRCLE, MT—Continued**SUMMARY STATISTICS**

	Calendar Year 2011	Water Year 2012	Water Years 1929 – 2012*	
Annual total	7,447.93	861.05		
Annual mean	20.4	2.35	11.2**	
Highest annual mean			61.6	1952
Lowest annual mean			0.04	1941
Highest daily mean	347	May 22	4,510	Mar 31, 1952
Lowest daily mean	0.18	Feb 1	c0.00	Oct 8, 1929
Annual seven-day minimum	0.77	Jan 31	0.00	Nov 20, 1929
Maximum peak flow			d6,960	Jun 29, 1986
Maximum peak stage			12.93	Mar 4, 1994
Annual runoff (ac-ft)	14,770	1,710	8,100	
10 percent exceeds	56	3.4	7.2	
50 percent exceeds	3.2	2.1	0.20	
90 percent exceeds	1.1	0.11	0.00	

*During periods of record April to November 1929, March to November 1930, July 1931 to December 1932, March to June 1933, February to November 1934, April 1935 to September 1936, April 1937 to June 1972, October 1974 to September 2004, October 2009 to current year.

**Median of yearly mean discharges, 5.38 ft³/s, 3,900 ac-ft/yr.

aGage height, 4.64 ft.

bBackwater from ice jam.

cNo flow most years.

dFrom rating curve extended above 3,500 ft³/s, gage height, 12.85 ft, from floodmark.

